



## **DEPARTMENT OF THE INTERIOR**

### **Fish and Wildlife Service**

#### **50 CFR Part 17**

**[Docket No. FWS–R5–ES–2012–0054]**

**[4500030113]**

### **Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Heller Cave Springtail as Endangered or Threatened**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notice of petition finding and initiation of status review.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), announce a 90-day finding on a petition to list the Heller Cave springtail as endangered or threatened under the Endangered Species Act of 1973, as amended (Act) and to designate critical habitat. Based on our review, we find that the petition presents substantial scientific or commercial information indicating that listing this species may be warranted. Therefore, with the publication of this notice, we are initiating a review of the status of the species to

determine if listing the Heller Cave springtail is warranted. To ensure that this status review is comprehensive, we are requesting scientific and commercial data and other information regarding this species. Based on the status review, we will issue a 12-month finding on the petition, which will address whether the petitioned action is warranted, as provided in section 4(b)(3)(B) of the Act.

**DATES:** We request that we receive information on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. The deadline for submitting an electronic comment using the Federal eRulemaking Portal (see **ADDRESSES** section below) is 11:59 p.m. Eastern Time on this date. After [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER], you must submit information directly to the **Division of Policy and Directives Management** (see **ADDRESSES** section below). Please note that we might not be able to address or incorporate information that we receive after the above requested date.

**ADDRESSES:** You may submit information by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal:

<http://www.regulations.gov>. In the Search field, enter Docket No. FWS–R5–ES–2012–0054, which is the docket number for this action. Then click on the Search button. You may submit a comment by clicking on “Comment Now!”

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R5–ES–2012–0054; Division of Policy and Directives

Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042–PDM; Arlington, VA 22203.

We will post all information we receive on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the **Request for Information** section below for more details).

**FOR FURTHER INFORMATION CONTACT:** Martin Miller, Threatened and Endangered Species Chief, Northeast Regional Office, 300 Westgate Center Drive, Hadley, MA 01035; by telephone at 413-253-8615; or by facsimile at 413–253–8482. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800–877–8339.

## **SUPPLEMENTARY INFORMATION:**

### **Request for Information**

When we make a finding that a petition presents substantial information indicating that listing a species may be warranted, we are required to promptly initiate review of the status of the species (status review). For the status review to be complete and based on the best available scientific and commercial information, we request information on the Heller Cave springtail (*Typhlogastrura helleri*) from governmental agencies, Native American tribes, the scientific community, industry, and any other

interested parties. We seek information on:

- (1) The species' biology, range, and population trends, including:
  - (a) habitat requirements for feeding, breeding, and sheltering;
  - (b) genetics and taxonomy;
  - (c) historical and current range including survey data and distribution patterns;
  - (d) historical and current population levels, and current and projected trends; and
  - (e) past and ongoing conservation measures for the species, its habitat, or both.

(2) The factors that are the basis for making a listing determination for a species under section 4(a) of the Act (16 U.S.C. 1531 *et seq.*), which are:

- (a) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (b) overutilization for commercial, recreational, scientific, or educational purposes;
- (c) disease or predation;
- (d) the inadequacy of existing regulatory mechanisms; or
- (e) other natural or manmade factors affecting its continued existence.

(3) Information related to the operation and status of the small, large, or both, non-coal mining project(s) and permit(s) associated with the "Carlim Quarry" or "Catherine Properties-Heller Mine" in Catherine Township, Blair County, Pennsylvania. The owner or operator of this project may be known as Gulf Trading and Transport,

Catherine Corporation, or General Trade Corporation.

If, after the status review, we determine that listing the Heller Cave springtail is warranted, we will propose critical habitat (see definition in section 3(5)(A) of the Act) under section 4 of the Act, to the maximum extent prudent and determinable at the time we propose to list the species. Therefore, we also request data and information on:

(1) What may constitute “physical or biological features essential to the conservation of the species,” within the geographical range currently occupied by the species;

(2) Where these features are currently found;

(3) Whether any of these features may require special management considerations or protection;

(4) Specific areas outside the geographical area occupied by the species that are “essential for the conservation of the species;” and

(5) What, if any, critical habitat you think we should propose for designation if the species is proposed for listing, and why such habitat meets the requirements of section 4 of the Act.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Submissions merely stating support for or opposition to the action under

consideration without providing supporting information, although noted, will not be considered in making a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made “solely on the basis of the best scientific and commercial data available.”

You may submit your information concerning this status review by one of the methods listed in the **ADDRESSES** section. If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this personal identifying information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>.

Information and supporting documentation that we received and used in preparing this finding is available for you to review at <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Northeast Regional Office (see **FOR FURTHER INFORMATION CONTACT**).

## **Background**

Section 4(b)(3)(A) of the Act requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial

information indicating that the petitioned action may be warranted. We are to base this finding on information provided in the petition, supporting information submitted with the petition, and information otherwise available in our files at the time of the petition's receipt. To the maximum extent practicable, we are to make this finding within 90 days of our receipt of the petition and publish our notice of the finding promptly in the **Federal Register**.

Our standard for substantial scientific or commercial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is "that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted" (50 CFR 424.14(b)). If we find that substantial scientific or commercial information was presented, we are required to promptly initiate a species status review, which we subsequently summarize in our 12-month finding.

#### *Petition History*

On October 13, 2011, we received a petition dated October 13, 2011, from Mollie Matteson (petitioner), on behalf of the Center for Biological Diversity (CBD) and the Juniata Valley Audubon Society (JVAS), requesting that the Heller Cave springtail be listed as endangered and that critical habitat be designated under the Act (Petition). The petition clearly identified itself as such and included the requisite identification information for the petitioners, required at 50 CFR 424.14(a). In a January 8, 2012, letter to the petitioner, we responded that we had received the petition sent to the Secretary of

the Interior and that we would contact the petitioner when we completed review of the petition. On January 11, 2012, the petitioner sent additional information to supplement the October 13, 2011 petition. This finding addresses the supplemented petition.

#### *Previous Federal Actions*

There are no previous Federal actions on the Heller Cave springtail.

#### *Species Information*

The Heller Cave springtail is a small, wingless, cave-dwelling arthropod in the Family Hypogastruridae and Order Collembola. All Collembola have the common name of “springtail” because of their furcula, or “jumping apparatus” located underneath and at the end of the abdomen (Christiansen 1992, p. 3). The Heller Cave springtail type specimen (individual used to formally describe the species) is 1.4 millimeters (mm) (0.06 inches (in)) long, but other specimens have ranged up to 2.1 mm (0.08 in) in length (Christiansen and Wang 2006, p. 89). The Heller Cave springtail is tan with five to six black eye spots on each side of its head and three thoracic (chest) segments (Christiansen and Wang 2006, pp. 92–94). A more detailed species’ description can be found in Christiansen and Wang (2006, pp. 92–94).

The petitioner, citing the scientist who first described the species, asserts that the Heller Cave springtail is endemic to Heller Cave in Huntingdon County, Pennsylvania



(Petition, p. 5; Christiansen and Wang 2006, p. 93). The type locality (location where the type specimen was collected), Heller Cave #5, is one of nine caves in a cave complex (Petition, p. 7) spanning the Blair-Huntingdon County line. The type specimen was collected within the cave on a pool surface (Christiansen and Wang 2006, p. 94). However, information in our files suggests that it may not be reasonable to automatically assume the species is solely endemic to Heller Cave. Discussion between Joseph Reznik, a springtail expert from the Carnegie Museum of Natural History, and Betsy Leppo, an invertebrate zoologist with the Pennsylvania Natural Heritage Program (PNHP), indicates that there is uncertainty about previous assumptions regarding the species' aquatic nature and cave endemism (Leppo 2010, pp. 1–2). In an electronic mail message to PNHP staff, the springtail expert stated “Many species of springtails that have been attributed to being cave endemics have been classified being endemic based on physical characteristics (i.e., loss of pigment, eyes, etc.), but many soil species also have these characteristics,” and suggested that Heller Cave springtail surveys be conducted in the scree and talus environments outside of Heller Cave (Leppo 2010, p. 2). We are unaware of whether PNHP or Pennsylvania Game Commission (PGC) conducted further surveys for Heller Cave springtail outside of the species' type locality.

We have no information about the Heller Cave springtail's habitat outside of the type locality, diet, reproduction, or population size. Inferring information from other springtails may not be fully reliable, as some of these characteristics within the Collembola Order vary widely. For example, Christiansen (1992, p. 2) states Collembola “occur almost everywhere from the tops of the tallest trees to the deepest soil strata where

life occurs. They are in fact found everywhere life of any sort is found except the open ocean or below surface in bodies of freshwater.” As for diet, some species eat plant material, others eat micro-organisms, and some exhibit cannibalistic traits and eat their own eggs (Christiansen 1992, p. 4; Bellenger et al. 1996, pp. 2–3). In general, Collembola exhibit sexual differentiation (male and female individuals), and reproduction occurs through the deposition and reception of spermatophores (sperm packets); eggs are laid; and molting occurs during growth (Christiansen 1992, pp. 4–5). Christiansen and Wang (2006, p. 93) did collect both male and female individuals in Heller Cave #5. None of the readily available information sources indicate what a typical population size for Collembola species may be, and no typical population size is available specifically for the Heller Cave springtail.

The species was formerly described by Christiansen and Wang (2006, entire). We do not have any information in our files that indicates controversy with the species’ taxonomy; therefore, at this time we are recognizing the Heller Cave springtail as a valid species.

### **Evaluation of Information for this Finding**

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations at 50 CFR 424 set forth the procedures for adding a species to, or removing a species from, the Federal Lists of Endangered and Threatened Wildlife and Plants. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

In considering what factors might constitute threats, we must look beyond the mere exposure of the species to the factor to determine whether the species responds to the factor in a way that causes actual impacts to the species. If there is exposure to a factor, but no response, or only a positive response, that factor is not a threat. If there is exposure and the species responds negatively, the factor may be a threat and we then attempt to determine how significant a threat it is. If the threat is significant, it may drive or contribute to the risk of extinction of the species such that the species may warrant listing as endangered or threatened as those terms are defined by the Act. This does not necessarily require empirical proof of a threat. The combination of exposure and some corroborating evidence of how the species is likely impacted could suffice. The mere identification of factors that could impact a species negatively may not be sufficient to compel a finding that listing may be warranted. The information shall contain evidence sufficient to suggest that these factors may be operative threats that act on the species to the point that the species may meet the definition of threatened or endangered under the Act.

In making this 90-day finding, we evaluated whether information regarding threats to the Heller Cave springtail, as presented in the petition and other information available in our files is substantial, thereby indicating that the petitioned action may be warranted. Our evaluation of this information is presented below.

*A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range.*

Information Provided in the Petition

The petitioner states that a proposed limestone quarry in Blair County, Pennsylvania, would significantly modify or destroy the Heller Caves complex, the only known location of the Heller Cave springtail (Petition, p. 10). The petitioner states that in June 2010, "...the Pennsylvania Department of Environmental Protection [DEP], Bureau of Mining and Reclamation, issued a small non-coal mining permit to Catherine Properties, LLC, for a project at and around the Heller Caves site. This permit allows logging, road building, and removal of up to 10,000 tons per year of rock and other surface materials (Pennsylvania DEP 2010a)" (Petition, p. 10). The petitioner also states that "even if a quarry does not completely obliterate a cave, it can cause significant harm to cave habitat in several ways," including structural damage; changes in temperature, humidity, water quality, and water quantity; and trampling of flora and fauna, littering, and introduction of foreign substances through increased human access (Petition, pp. 12–

14). The petitioner asserts that these impacts are particularly problematic for cave obligate species like the Heller Cave springtail (Petition, p. 12).

#### Evaluation of Information Provided in the Petition and Available in Service Files

The petitioner's assertion that the limestone quarry (i.e., mine) proposed for operation in Blair County, Pennsylvania, near the Heller Caves complex will remove a significant amount of rock, is corroborated by readily available information within the Service's files (Secor 2006a, entire; Secor 2006b, entire; Service 2006, entire; Service 2009, entire; Stormer 2009, entire; U.S. Department of Agriculture (USDA) 2010, entire; Stormer 2010a, entire; Stormer 2010b, entire). The amount of total acreage of the proposed site varies from 5 to 187 acres (2 to 76 hectares (ha)), and the acreage and potential location of disturbance varies from 5 to 7.4 acres (2 to 3 ha) inside or outside of the Heller Caves core area, depending upon the source of the information (Secor 2006a, p. 1; PADEP 2009, p. 1; Service 2009, p. 1; Stormer 2009, p. 1; USDA 2010, pp. 1, 4; Stormer 2010a, p. 1; Stormer 2010b, p. 1; Turner 2010, p. 1; Petition, p. 11). We do not have readily available copies of the permit request from Gulf Trading and Transport (sometimes alternatively known as Catherine Properties or General Trade Corporation) including the scope of, and specific activities associated with, a small or large non-coal mining operation, the approved permit from PADEP, or PGC's comments on the proposed permit to be able to state the actual recorded site and disturbance acreages.

We have limited information on the project's proposed impacts to the area. We

only have project information regarding the potential size, county location, and land clearing (e.g., forestry) activities provided to us when we conducted three separate project analyses for potential impacts to the federally listed northeastern bulrush (*Scirpus ancistrochaetus*) (Service 2006, p. 2) and the Indiana bat (*Myotis sodalis*) (Service 2006, pp. 1–2; Service 2009, p. 1; Service 2010, pp. 1–2). Indiana bats are not found in the Heller Caves complex (Western Pennsylvania Conservancy (WPC) 2006, entire; Turner 2010, p. 1). The Service has jurisdiction over federally listed species, so our review and analyses were conducted within that jurisdictional constraint. We did not have information about, or recommendations for, either the eastern small-footed bat or the Heller Cave springtail during the 2006, 2009, and 2010 project reviews.

Because we do not have readily available, project-specific information about the proposed Heller Cave mine project beyond the potential project size, county location, and impacts to Indiana bat habitat from forestry clearing we used in the 2006, 2009, and 2010 reviews, we cannot assess the accuracy of the petitioner’s mining operation project details (Petition, pp. 10–12). If the petitioner’s information is correct about blasting activities being a part of the small (or large) non-coal mining permit (Petition, p. 11), the potential effects of the blasting activity may impact the Heller Cave springtail. The Heller Caves complex is identified in a Blair County planning document as core habitat for eastern small-footed bat (*Myotis leibii*) winter hibernation (Western Pennsylvania Conservancy (WPC) 2006, p. 46). The Heller Cave springtail co-occurs in the Heller Cave #5 with the eastern small-footed bat. The Blair County planning document states “Blasting or other activities that disrupt bedrock within the core areas may damage the

structure of the cave, potentially making it unsuitable for the bats,” and recommends “blasting and other activities that will affect the bedrock should be avoided within this [core habit] area so as not to damage the cave in use as a hibernation site (WPC 2006, p. 47). Because the Heller Cave springtail co-occurs with the eastern small-footed bat, the potential negative impacts of blasting activities at or around the Heller Cave complex previously documented for the eastern small-footed bat may also have potential negative impacts to the Heller Cave springtail, particularly if the blasting activity causes damage to the structure of Heller Cave #5 such that the cave collapses or facilitates changes in temperature, humidity, water quality, or water quantity. Therefore, we conclude that information in the petition and readily available in our files indicates that quarrying activities may be a threat to the Heller Cave springtail and its habitat.

*Summary of Factor A* — In summary, information in the petition and readily available in our files indicates that the present or threatened destruction, modification, or curtailment of its habitat or range through impacts associated with limestone quarry operations may be a threat to the Heller Cave springtail.

*B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes.*

Information Provided in the Petition

The petitioner did not provide any information on overutilization of the Heller Cave springtail.

## Evaluation of Information Provided in the Petition and Available in Service Files

We have no information in our files to suggest overutilization may be a threat to the Heller Cave springtail.

*Summary of Factor B* — In summary, information in the petition and readily available in our files does not indicate that overutilization for commercial, recreational, scientific or educational purposes may be a threat to the Heller Cave springtail. However, whether this factor is a threat to the species will be further investigated during our 12-month status review.

### *C. Disease or Predation.*

## Information Provided in the Petition

The petitioner did not provide any information on disease or predation of the Heller Cave springtail.

## Evaluation of Information Provided in the Petition and Available in Service Files

We have no information in our files to suggest disease or predation may be a threat to the Heller Cave springtail.



*Summary of Factor C* — In summary, information in the petition and readily available in our files does not indicate that disease or predation may be a threat to the Heller Cave springtail. However, whether this factor is a threat to the species will be further investigated during our 12-month status review.

*D. The Inadequacy of Existing Regulatory Mechanisms.*

Information Provided in the Petition

The petitioner makes three separate inadequacy of existing regulatory mechanism assertions. First, the petitioner asserts that the Heller Cave springtail has no protective status at the local, State, or Federal level and, therefore, current regulatory mechanisms are inadequate to protect it (Petition, p. 14). The petitioner further states that even if the Heller Cave springtail was State-listed or a species of concern, those protective statuses would likely provide inadequate protection. This assertion is based on the petitioner's assessment that the PADEP issued the small, non-coal mining permit despite the documented presence of the eastern small-footed bat, a State-designated threatened species, in Heller Cave (Petition, p. 15). Second, the petitioner asserts that recognition of the Heller Caves complex as a "Biological Diversity Area" and "Important Bird Area" is insufficient to regulate protection of the species (Petition, p. 15). Third, the petitioner asserts that the State's current environmental review and permitting process failed to protect the Heller Cave springtail (Petition, p. 16).

## Evaluation of Information Provided in the Petition and Available in Service Files

The petitioner's first assertion is that the Heller Cave springtail is not a protected species under current regulatory mechanisms at the local, State, and Federal level, and therefore, those mechanisms are inadequate to protect the species (Petition, p. 14). The petitioner states that since there is a lack of regulatory recognition for the species "no deliberate program for its conservation can or has been instituted" (Petition, p. 15).

The petitioner's second assertion is that recognition of the Heller Caves complex as a "Biological Diversity Area" and "Important Bird Area" is insufficient to regulate protection of the Heller Cave springtail (Petition, p. 15). A Biological Diversity Area (BDA) is defined as "An area containing plants or animals of special concern at State or Federal levels, exemplary natural communities, or exceptional native diversity. BDAs include both the immediate habitat and surrounding lands important in the support of these special elements" (WPC 2006, p. 6). The BDAs are used in conservation planning to "identify core areas that delineate essential habitat that cannot absorb significant levels of activity without substantial impact to the elements of concern" (WPC 2006, p. 6). An Important Bird Area (IBA) is defined as "a site that is part of a global network of places recognized for their outstanding value to bird conservation" with application for conservation planning to maintain the areas for valuable bird habitat (WPC 2006, p. 6). The Heller Caves complex site is ranked as a BDA of high significance because it provides a "winter hibernation site for bat colonies, including the state and global-

concern species eastern small-footed myotis” (WPC 2006, p. xi). The BDA and IBA designations are nonregulatory community planning tools. The petitioner concedes that “designation as a BDA confers no regulatory protection” (Petition, p. 15).

Third, the petitioner asserts that the State’s current environmental review and permitting process failed to protect the Heller Cave springtail or its habitat (Petition, p. 16). The proposed Heller Cave limestone mine project overlaps the Heller Caves BDA. The Heller Caves BDA contains the eastern small-footed bat and the Heller Cave springtail (Petition, p. 16; WPA 2006, p. 46). The eastern small-footed bat is a State-listed species and falls under the PGC’s jurisdiction. The Heller Cave springtail is neither a federally or State-listed invertebrate nor a State species of concern (Shellenberger 2010, p. 1; Leppo 2010, p. 1). Information in our files at the time of the petition’s receipt indicates uncertainty as to whether the Heller Cave springtail is a true aquatic invertebrate and, therefore, falls under the PA Fish and Boat Commission’s jurisdiction, or whether it is a terrestrial invertebrate and therefore falls under PNHP’s jurisdiction (Leppo 2010, p. 1). The Service is unaware of which State agencies the PADEP contacted to review the mine project for impacts to the Heller Cave springtail.

The PGC was contacted to review the project for possible impacts to the eastern small-footed bat (Petition, p. 11; Shellenberger 2010, p. 1). According to the Petition (p. 15), the PGC recommended a “Total Avoidance Area” around Heller Cave because the proposed quarrying project is likely to disturb or destroy winter and summer bat habitat. The petitioner did not provide PGC’s comments on the mining project to the Service as

part of the Petition's references, and those comments are not readily available to the Service. We have no readily available information to confirm the Petition's assertion that the existing environmental review and mine permitting processes may be inadequate to protect the Heller Cave springtail or its habitat, through the surrogacy of the eastern small-footed bat. Based on review of the Petition's information, we conclude that the Petition indicates that the existing permit processes may be inadequate to protect the Heller Cave springtail.

*Summary of Factor D* — In summary, information in the petition and readily available in our files indicates that inadequate regulatory mechanisms for (1) Factor A—the present or threatened destruction, modification, or curtailment of the species' habitat caused by the proposed limestone quarry or its mining operations; and (2) Factor E (see below)—other natural or manmade factors affecting its continued existence caused by mortality from the proposed limestone quarry's rock removal and blasting operations may be a threat to the Heller Cave springtail.

*E. Other Natural or Manmade Factors Affecting Its Continued Existence.*

Information Provided in the Petition

The petitioner states that three anthropogenic factors are threats to the Heller Cave springtail: (1) Direct mortality as a result of rock removal and blasting, (2) cave vandalism and direct human-caused mortality, and (3) climate change (Petition, pp. 16–

17).

#### Evaluation of Information Provided in the Petition and Available in Service Files

The petitioner first asserts, with no supporting information, that the Heller Cave springtail is threatened from “direct take” (i.e., mortality) as a result of the proposed limestone quarry’s rock removal and blasting operations (Petition, p. 16). Information in our files suggests that some of the proposed quarry activities may occur outside of the Heller Cave core area (Stormer, 2010a, p. 1; Turner, 2010, p. 1; Shellenberger 2010, p. 1). However, our information does not state how much of the quarry operations or what type (i.e., blasting vs. land clearing) of quarry operations may occur outside of the Heller Cave core area. If blasting and rock removal activities take place within the Heller Cave core area, including Heller Cave #5—the type locality for the Heller Cave springtail and hibernacula site of the eastern small-footed bat—those activities as described in the petition may impact the Heller Cave springtail (Petition, pp. 10–14). Blasting and rock removal activities may destabilize the cave site (WPC 2006, pp. 46). If the cave destabilizes to the point that collapsing material falls on the locations where the Heller Cave springtail specimens were collected, then direct mortality may occur. We conclude that direct mortality could occur from rock removal and blasting if those activities occur within or very near the Heller Caves complex.

The petitioner further asserts that the Heller Cave springtail is threatened by cave vandalism and intentional human-caused mortality. The petitioner does not provide

information to support this assertion, merely stating that “it is possible that one or more attempts could be made to obliterate this unique species” prior to protection under the Act (Petition, p. 17). We do not have any information in our files to indicate that this intentional harm may be a specific threat to the Heller Cave springtail. We are not aware of specific vandalism instances for eastern small-footed bat hibernacula in Pennsylvania or for the Heller Caves complex. Therefore, it is unlikely that the cave site itself may be subjected to vandalism. However, we will fully investigate whether intentional cave disturbance or vandalism is a threat to the Heller Cave springtail and its habitat in our 12-month status review.

The petitioner lastly asserts that “climate change may be affecting the Heller Cave springtail at this time, or it may in the future” (Petition, p. 17). The petitioner cites three documents in this section, only one of which can be assessed for accuracy. Of the other two, the Natural Resource Council 2006 citation does not relate to the information for which it is used as a citation. The Toomey and Nolan 2005 citation is not included in the petitioner’s list of literature cited and consequently could not be quickly searched for or located. The petitioner did not include copies of the references. The petitioner’s third citation is a Service (2011, p. 1) blog post about climate change and its impacts on Indiana bat conservation efforts, which includes a bat biologist quoted as saying “Surface temperature is directly related to cave temperature, so climate change will inevitably affect the suitability of hibernacula” (Petition, p. 17).

We have general information in our files indicating that climate change is

occurring. The Fourth Assessment Report: Climate Change 2007, prepared by the Intergovernmental Panel on Climate Change (IPCC), presents credible science on global climate change. The IPCC concludes that warming of the climate system is unequivocal, as evidenced by observations of increasing global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level (IPCC 2007, p. 2). The warming trend is expected to continue as a result of a projected increase of global greenhouse gas emissions by 25 to 90 percent from 2000 to 2030, which would be greater than the change observed during the 20th century (IPCC 2007, p. 7). Although there is some uncertainty regarding the mechanics of climate change and how much temperatures will change, the projected global average surface increase is estimated to range from 1.1 °C to 6.4 °C (2.0 °F and 11.5 °F) in 2090 to 2099 over the temperatures observed during the 19-year period of 1980 to 1999 (IPCC 2007, p. 8).

We do not have any readily available information as of the petition's receipt that further refines the IPCC's (2007, entire) conclusions at regional or local scales to allow us to assess whether, or to what extent, the Heller Cave springtail may be impacted by climate change. The petitioner acknowledges that how regional climate change may impact the Heller Cave springtail is unknown (Petition, p. 17) but suggests the Heller Cave springtail "would be highly vulnerable to climate-related shifts in its physical environment" because it is an "extremely range-limited cave obligate" species. As discussed above in the *Species Information* section, information in our files raises uncertainty as to whether the Heller Cave springtail may occur only within Heller Cave, and by extension whether the species is a cave obligate (Leppo 2010, p. 2). Because of

the high levels of uncertainty in regional or local scale climate change impacts and the uncertainty of the Heller Cave springtail's cave endemism, we cannot reasonably state that climate change may be a threat to the species. However, we will fully investigate the potential effects of climate change on the Heller Cave springtail in our 12-month status review.

*Summary of Factor E* — In summary, information in the petition and readily available in our files indicates that direct take as a result of the proposed limestone quarry's rock removal and blasting operations may be a threat to the Heller Cave springtail, but does not indicate that intentional take from cave disturbance and vandalism or from climate change may be a threat to the species.

## **Finding**

On the basis of our determination under section 4(b)(3)(A) of the Act, we determine that the petition presents substantial scientific or commercial information indicating that listing the Heller Cave springtail throughout its entire range may be warranted. This finding is based on information provided under factors A, D, and E. We determine that the information provided under factors B and C is not substantial.

Because we have found that the petition presents substantial information indicating that listing the Heller Cave springtail may be warranted, we are initiating a status review to determine whether listing the Heller Cave springtail under the Act is



warranted.

### **References Cited**

A complete list of references cited is available on the Internet at *<http://www.regulations.gov>* and upon request from the Northeast Regional Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Author**

The primary authors of this notice are the staff members of the Northeast Regional Office.

**Authority**

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Date: 8/20/2012

Benjamin Tuggle

Acting Director, U.S. Fish and Wildlife Service

**Billing Code 4310-55-P**

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